

REDUCING CO-CHANNEL INTERFERENCE IN SATELLITE COMMUNICATIONS SYSTEMS BY ANTENNA RE-POINTING

ABSTRACT OF THE DISCLOSURE

A system and method for increasing the performance of a satellite communication system by using a multivariate analysis approach to optimize the pointing of the boresight of a satellite-mounted antenna. Optimizing the pointing of the boresight of the antenna minimizes sidelobe generation, and thus Co-Channel Interference (CCI) in geographic areas served by the system. By minimizing CCI, the overall system performance of the communication system is optimized. To optimize the pointing of the boresight of the antenna, the overall performance of the satellite communication system is determined, and the boresight of the antenna is iteratively repointed in the direction of increasing system performance until the optimized boresight pointing is determined. Alternatively, the frequency re-use plan of the satellite communication system may be analyzed to determine a high density cell region and the boresight may be pointed to the high density cell region.